Blanket WiFi in Canada

HUB

DIGITAL   LIVING

Fun in the sun: How to take great vacation pics

Car stereos: Music on the road

Introduction to geocaching

N

W   E

S

Tech Trek

Test Lab: Navigating with GPS

Digital Imaging   Home Entertainment   Personal Computing   Total Gamer   Wireless

www.hubcanada.com

YELLOW SO YELLOW, IT'LL MAKE YOUR EYES SMART.

Yellow. The colour of renewal, happiness and energy. Dazzling yellows and soft-muted yellows – butternut and mustard yellows – lemon yellows and sunshine yellows. Yellows so bright, you'll have to squint and blink twice.

Brother delivers the sharpness, brightness and colour density you want – with brilliant results.

From your home to your office, Brother's wide range of extremely user-friendly printers and multi-function centres will communicate your colour experience. All of Brother's imaging products include efficient colour cartridge systems, effective energy consumption and low consumable costs.

Moreover, our low acquisition costs, coupled with a nationwide network of authorized customer care centres and toll-free technical support for the life of your machine, will not only enhance your colour initiatives, but also your customer satisfaction.

So go ahead – print, fax, scan, copy, network...in colour.

For more information, visit **brother.ca**

MFC-420CN

MFC-9420CN

brother. At your side.

Editorial

Emancipation. Albeit brief. A severing of the ties that bind us... to our desks.

Or if you prefer, summer time and the living is easy.

Breaking away from your desk for some well deserved R&R is a summer rite. The problem is, all too often, the desk comes with you; hopefully not literally strapped to your roof rack as you head out to enjoy Canada's wilderness, but if you're not careful, it will come with you in spirit.

The funny thing about vacations is that while you're taking a week or two off, the work you would have otherwise been doing for that week or two will likely still be there for you when you get back. The weeks leading up to or following a vacation are often the most stressful.

Assuming you manage to break away for a couple of weeks, the work load may stay sitting on your desk, but technology doesn't.

In fact, HUB:Digital Living readers are more likely to pack the laptop, grab a digital camera; MP3 player, DVD or portable video players, GPS receiver and maybe even a solar charger to keep things running away from a power receptacle. Cell phones, while a virtual leash back to the office, are all but necessity too.

In this issue, we take a look at devices to power the digital road trip an gadgets that help you enjoy the outdoors on a different level. Our test lab this month looks at in-car GPS receivers. On a road trip, they can be invaluable in getting from point A to a distant and unfamiliar point B, in some cases, updating traffic status to give intelligent detours around congestion.

We also offer tips and techniques for shooting still pictures or video in the sun to make sure you have something to show for it when you return to your desk and an overflowing inbox, examine the state of blanket WiFi coverage in Canada and much more.

The logistics of a nationwide magazine, made possible in large part by our regional advertisers mean that not all stories appear in all regions due to space constraints.

All HUB stories are available on our web site www.hubcanada.com the day the print magazine hits the streets.

Enjoy the issue,
Andrew Moore-Crispin
Editor-in-Chief

Contents

July 2006

www.hubcanada.com

Capturing your summer vacation

Summer vacation is a great time for taking pictures. We are usually relaxed and ready for a good time, and this helps us see photo opportunities more easily than when we're rushing through our everyday lives. Plus the surroundings are different and often new to us, so the uniqueness of an area really jumps out.

If you are shopping for a new digital camera for your vacation, look for one with features that match your activities. For example, if you vacation around water, you'll want something that's weatherproof. Olympus and Pentax have models you can actually use underwater, ideal for shallow snorkeling or dipping into a tidal pool. Most manufacturers have cameras with long telephoto lenses, and these are great for wildlife photography. Long telephotos tend to magnify small camera movements and hand tremors that create blurred images, so consider models that include image stabilization or vibration reduction.

If you travel overseas and your camera uses standard batteries like AA, you should be fine. If your camera uses a proprietary battery, you'll need to get an adapter so you can plug the charger into the local power outlets. Many chargers are auto power sensing and are designed to be universal, so the only piece you need to buy is the power cord part that matches the country's power outlet plug configuration.

You'll also have to think about how to store your images, especially if you are gone for an extended period or you intend to take a lot of photos. Memory cards are now relatively 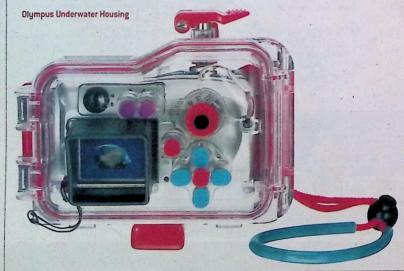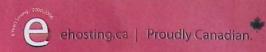affordable — around $100 per 1GB card. A 1GB card will hold between 250-300 high-quality JPEG images from a six megapixel camera. If you think 300 photos is an insanely high number, remember that once you've paid for the memory cards, it doesn't cost any more to shoot 300 frames than 30 frames. It's far better to delete the rejects once you're back home than to live with the regret of "I shoulda got a picture of that."

If you shoot RAW, you'll definitely need lots of memory cards or an auxiliary storage system. If you travel with a notebook computer, you can download images to its hard drive. Portable photo storage units like the Epson P4000 give you up to 80GB of external storage, plus a screen so you can review your shots.

As well as shots of family members and the obvious tourist attractions, what else could you take pictures of? Follow your interests. I know a postman who has images of quaint post offices he's photographed on vacation. On road trips across Canada I take pictures of old cars from the '50s and '60s that I see abandoned in fields. Some people have interesting photo collections of road signs, architectural details of old buildings, local food, subway systems, lighthouses — you name it. After you have done this for three or four vacations, you have the makings of an interesting collection that can take on a life of its own — you may start choosing vacation spots so you can photograph that special thing.

By David Tanaka

Olympus Underwater Housing

DV, or Not DV

Summer shooting: It all comes out awash

It's high noon, I'm sitting in the bright midday sun, watching some hot 'boarders run through their fakies and goofyfoot moves through the concrete canyons of downtown Toronto.

A couple of 'em perform awesome shove-its, but it's the guy with the camera that really catches my eye. He's struggling to get a decent shot, even though there's plenty of light.

He's got the strongest keylight in the world: the sun. But he still gets dark patches in his shot — hard shadows that suck up detail and definition. Switching to manual mode, he opens up the iris to eliminate the shadows, but then the sky blows out. Fiddling around some more, he totally misses the great moves going down.

Later, taping some interviews, just getting comments from the skateboarders is a challenge. Their baseball cap brims cast a nasty shadow across their faces, even when the rest of the shot looks pretty decent. What you can see of their faces is washed out, making them look kinda pasty and malnourished.

Shooting video in the great outdoors is not always as great as it sounds.

Even on the nicest of days, light is always changing. From bright sun to shade, from high noon to sunset, the intensity and the colour cast of sunlight will change. Our eyes adjust automatically, and so the changes seem invisible.

But most digital video cameras do not adjust automatically, and so we have to show them a reference so they know what's what — that reference is the colour white. DV cameras that know what white is (under a certain lighting condition) will know what every other colour should be. Cameras that aren't white balanced properly will cast a tint across all the footage that's shot, often either bluish or orange.

So be sure to white balance in each and every shooting condition you encounter. Even when moving from a bright sunny area to a shaded scene, you should re-balance the camera.

The kind of days we humans love — bright sun and blue sky - is also the kind of day that gives cameras a real headache. It's too much of a good thing, and often the sun is too intense as a video lighting source. It's a hard, harsh light, and it often casts deep, dark shadows.

In many ways, overcast days are better for videotaping outdoors. A cloud layers' effect on sunlight is to turn it nice and soft, eliminating hard edge shadows.

Videographers can have the best of both worlds, though. Enjoy the sunny summer, but at the same time control the sun and turn it into a soft, subtle lighting tool.

There are at least two ways to do this: one is to use an ND (for neutral density) filter. Many cameras have these built-in, while others can be fitted with a snap-on or screw-in filter for the front of the camera lens. ND filters do not affect the colour in a picture, but they do darken the overall image, reducing the amount of light getting through the lens in an even and uniform manner. It's a handy way to control overly bright situations, like the beach or a concrete jungle.

The skateboard shooter in question did not realize what the ND was on the side of his camera — until I stuck my nose in his shot!

Another way to control sunlight is to steer it, bounce it, shape it and soften it in such a way that it fills in for itself.

Here's where bounce boards or lighting cards come into play. These "lighting control devices" can be purchased at video or photo supply stores, but they

can also be easily homemade and very effective in many shooting situations.

For example, you can position a large piece of white cardboard so sunlight hits it head on, but then bounces back at your subject or some object in your shot. In the case of someone wearing a baseball cap at high noon, for instance, placing a white bounce board underneath their face, or down around their waist (depending on the shot), will bounce light back up at the face and eyes, filling in the darker areas with nice, soft illumination.

Bristol board, foam core, pillow cases on a wooden frame — almost anything with a white surface can be used to soften and bounce sunlight when shooting outdoors. (If you're battling the wind as well as the sun, make sure your bounce devices are weighted down or secured somehow.)

A similar technique can be used on a bright day, when a person is in shadow but the background is too bright. In such situations, video cameras struggle to figure out how much light they should let in. A person in front of a window with lots of light in the background will fool the camera into thinking it must not let in too much light and will darken everything else, leaving your person as a dark, silhouetted figure against a bright background.

To fight this, and to balance the light, use white bounce cards to lighten the face without affecting the background by bouncing sunlight back at the person in front of the window. Then, you can simply close down the iris to get the kind of shot you want.

Accessories for outdoor lighting control include name brand reflectors like Flexfills and PhotoFlex Lite Fills. Reflectors come in various sizes, usually circular, and often with one side white side and the other silver or gold. (The gold is really nice when bouncing sunlight back against a person's face, as it warms the light and makes people look tanned and healthy). I have a large 50-inch Flexfill, but the one I think I like the most is only five inches in diameter. It's small, handy and so cute, but very functional for punching up or illuminating small areas of a video scene without affecting other areas of the shot.

White works, of course, but so does other reflective material and substances. Sun tan

reflectors work; so do car windshield reflectors. Tin foil or aluminum foil from the kitchen can work, as well.

Finally, while the importance of proper white balancing cannot be overstated, there can be reasons to cheat. Instead of showing the camera a white card, some videographers instead show it a "warm" or "cool" card during white balancing. These cards are not white, but graded shades of blue or orange. When a camcorder sees light blue, and it is told to set that as a white balance, the camera shifts the colours it sees to a warmer range.

So, the next time you're shooting on a beautiful cloudless day, with the sun shining bright overhead, think about using your camera's built-in filtering to lower the overall brightness level. Or, consider controlling the light with bounce boards and reflectors to soften and shape it, or get a warm card for the white balance so that more natural looking skin tones are apparent in the harsh midday sun.

Or, find some skateboarders, and try all three!

By Lee Rickwood

Hit the Road: The other wireless Internet

GPRS and CDMA for surfing via cellular networks

When you talk about surfing the Internet from your laptop while you're on the road, the immediate thing that springs to mind is connecting to the net from a WiFi hotspot. While hotspots do seem to be springing up everywhere, one of the big downsides is that different hotspots use different companies for authentication and billing, which may mean that if you travel regularly, you'll have to juggle multiple hotspot accounts.

One way to get around this issue altogether is by using a cellular connection to the Internet: both GPRS and CDMA networks have undergone significant speed improvements since the first cellular modems crept into the marketplace many years ago, and while they're not quite up to the speed of broadband (yet), they're certainly fast enough now that you can get some actual work done.

Back in the day, to get your laptop connected to the Internet using a cellular connection, you often had to get a special cable that connected your cell phone directly to your computer. Now, you don't have to worry about hauling a specialty cable around with you. Instead, you can connect to the Internet using a PC Card cellular modem (a solution that existed in the past, albeit with a much slower connection speed), or wirelessly to your phone using Bluetooth.

Blue in the tooth

While it took a while for the technology to truly catch on, Bluetooth has finally found a home in the world of cellular phones: not only is it the connection method of choice for most hands-free headsets, it can also be used for wireless data connections on a desktop computer or laptop. Of course, both the phone and the computer have to have Bluetooth onboard, which is not always the case.

On cell phones, it's usually an either/or proposition: Either your cell phone has Bluetooth or it doesn't. While there are a few add-on Bluetooth adapters available for certain models of phone, generally you'll have to upgrade to a new phone if your current phone doesn't have it.

Laptops, on the other hand, only occasionally offer Bluetooth onboard. All of the new Mac notebooks have onboard Bluetooth, and a handful of Windows machines are catching up too. If your laptop isn't so equipped, the good news is that it's pretty simple and inexpensive to add support the standard: a USB 2.0 Bluetooth adapter runs between $25 and $50, with prices varying by brand and range.

Wireless

The toughest part will be configuring the software and pairing up your notebook with the phone. Typically, the Bluetooth adapter will include a software client for networking, so be prepared to roll up your sleeves and read the manual to figure out the exact procedure for making the connection to your phone.

In the cards

If your laptop has a PC Card slot, it may also be worth considering a dedicated card specifically for cellular data connection. Not only does it save you the trouble of juggling a Bluetooth dongle (in many cases you can simply leave the card inside the notebook, even when you pack it away at the end of the day), but it keeps your regular cell phone free for other tasks. In many cases, you can even use these cards to make voice calls through your laptop, and to receive text messages.

If you're not tied to a particular cellular carrier, you have a choice.

Rogers offers Sony Ericsson's GC89 EDGE / Wireless LAN card, which also doubles as an 802.11b/g WiFi card; it costs $50 with a three year contract, $349 with a one or two year term. Because it uses GPRS/EDGE technology, the big upside is that it uses standard SIM cards, which means you can change your phone number simply by swapping the card out.

Both Bell and Telus offer Kyocera's new Passport KPC-650 card for use on their CDMA 1x EV-DO networks; it runs about $250 without a contract, and Telus offers it without initial cost if users sign a three year contract. One nice feature with the Kyocera card is the adjustable antenna, allowing better reception. Even better is the speed: during testing of both EDGE and EV-DO, I found that the EV-DO network had a much peppier throughput. The downside is that CDMA cellular products don't allow you to just swap a SIM card when you want to change your phone number or device; that requires a call to client care.

It's worth noting that while both technologies are far faster than they used to be, they're still quite a bit slower than WiFi with a broadband connection.

The hard part

Whether you choose the Bluetooth route or the dedicated card route, you'll have to make sure you have a data plan that suits your needs – with the rich multimedia content found on a lot of web sites, you can claw your way through a megabyte of transfer almost instantly. At the moment, CDMA appears to offer the better deal for heavy data users, with both Bell and Telus offering 250MB of monthly transfer for $100; Rogers only gives 100MB for that amount.

Digital coverage area is also an important consideration before you buy: while you can use these cards within most metropolitan centres, coverage can be extremely spotty once you head into rural areas. All of the carriers have been working hard at bringing digital coverage to more areas around the country, but if you travel regularly to areas that are outside the major traffic corridors, you will need to check out the coverage maps on the carriers' websites before making that plunge.

By Sean Carruthers

Apple Introduces the new U2 iPod

A new version of the special edition U2 iPod has hit store shelves, featuring the same distinctive black stainless steel body, red click wheel, and custom band member signature engravings as its predecessor.

The latest U2 iPod is based on the fifth generation 30GB video iPod, and can hold up to 7,500 songs, 25,000 photos or 75 hours of video, according to Apple. U2 iPod customers will also receive 30 minutes of exclusive U2 video downloadable from the iTunes Music Store.

Featuring seamless integration with the iTunes Music Store and the iTunes digital music jukebox, the new U2 iPod features Apple's patent pending Auto-Sync technology that automatically downloads digital music, podcasts, photos, audiobooks, home movies, music videos and popular television shows onto the iPod and keeps them up-to-date whenever the iPod is plugged into a Mac or Windows computer using USB 2.0. The new U2 iPod features up to 14 hours of battery life for music playback.

The new 30GB U2 iPod is available immediately for a suggested retail price of $379 (CAN) through the Apple Store (www.apple.com/canadastore), Apple's retail stores and Apple Authorized Resellers. The new U2 iPod includes earbud headphones, USB 2.0 cable, a case and dock insert.

High-tech scavenger hunt

GPS trekking for purposeful hiking

Geocaching is a fun and potentially rewarding pastime. The tools required are simple and readily available. The only real expense associated with the hobby is the initial investment in a handheld GPS and batteries to keep it running.

There is a large and active geocaching community online that keeps the sport interesting, and if you're the type that needs a reason to go outside, a geocache may just be that reason.

Essentially, geocachers navigate to a specific point, triangulated by GPS satellites, where a previous geocacher has hidden a treasure chest of sorts. There are many different sorts of treasure chests (or caches) and the sport is founded on principals of fair play and minimal environmental impact. The community and the web sites that support it have created "Cache In, Trash Out" in an attempt to keep geocaching's environmental impact a net positive one, and users creating the original cache tend to give warning of sensitive environmental areas the geocachers might encounter on the trek.

Geocaches vary in type. There are regular caches,

often a military ammunition canister or a plastic storage container; multi-caches where users find one cache in order to get the coordinates for the next one; puzzle caches where users must solve a riddle or some other such puzzle (often a Sudoku) to get coordinates. There are also event caches where for example, a cache is hidden at a limited run event and is only available for the duration of said event.

Onward and upward

In our test trek, we're using Garmin's GPSMAP 60CSx. Pretty well any handheld GPS device will work, though for ease of use, a unit that has geocaching-specific functions makes it easier to keep track of and store and navigate to multiple caches in one trek. Many GPS handhelds can connect to a PC via a USB cable (either included or purchased separately) and there are several free or paid software suites that can manage and send geocache information to the device. See www.geocaching.com/waypoints for several options.

Geocaching.com, the unofficial hub for all things geocaching, allows users to download .loc files which can in turn be opened in geocaching software and output to files specific to your GPS device or, in some cases, sent directly to the GPS receiver in its native file format.

Geocaches run the gamut from the easily accessible urban caches on even terrain (often hidden while out walking the dog, it seems) to remote caches that are harder to get to. Geocaching.com offers user-supplied difficulty ratings for the different treks that are offered up from one to five for terrain difficulty and on the same scale for cache accessibility. The lower the number, the easier the trek or the find.

Easier geocaches (terrain wise) are generally within civilization and are confined to interesting if a little out of the way places in your city, often on hiking and biking trails. However, for higher terrain difficulty rated caches, standard hiking protocol stands: pack a change of clothes, an emergency survival kit, tell someone where you're going (made easier in this case by the fact that you have exact coordinates) and when you plan to return. Bring a flashlight, your GPS users' manual and bring and be familiar with navigating using a map and compass.

Geocaching has a language all its own, with acronyms like TFTH (thanks for the hike), TFTC (thanks for the cache), TNLN (took nothing, left nothing), SL (signed logbook) and others. Many of the urban caches give a

Trackable items

Items like "geocoins" or Travel Bugs are sometimes put into caches in the hopes of filling their owner's goal. Geocoins and Travel Bugs are traceable items or users can create their own. The idea here is that the original owner sets a goal for their traceable item; it could be to make it as far north as possible, to complete a return journey, landing back where it started after seeing parts of the world or anything the owner can dream up. When a cacher finds a traceable object, etiquette suggests that they read the item's goal — generally an instructional paper will say what the goal is — and if they can help it to achieve said goal, they carry it on the next leg of its journey. If cachers find a bug or coin, they follow a URL included on the item and record the find. Travel Bugs, for example, are purchased items that include a track log so owners can see where their Travel Bug is now and get updates on its next find.
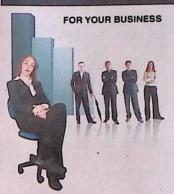
warning for the level of "muggle" activity in the area. Muggles, a word borrowed from the Harry Potter books and movies, in that case, non-magical folk, in the case of geocaching, they're those uninitiated to the sport. If muggles see you rooting around in the bushes, GPS in hand, they're likely to become very curious. If a muggle happens upon a cache, one of a few things could potentially happen. The person could open the cache, become intrigued and look for more information (caches often have a note asking muggles to return the cache where they found it, along with some info on the sport and where to look for more info), they could take the cache, considering it a fortunate find, thus ruining the spot for future geocachers.

Starting up

We're starting out with a simple geocache, just to get a feel for it. Searching www.geocaching.com for caches in the GTA met with limited success. American visitors to the site can search by zip code, but Canadian visitors aren't so lucky. Instead, searching for specific cities you'd like to explore is a good idea. Also, if you have a favourite summer campground or day-use park, try searching for it by name. Once users have logged their home coordinates, they can sign up for a weekly email of local caches, though "local" seems to be stretching it a little; we were offered treks many hundreds of kilometers away with few truly local caches offered.

Heading out

Coordinates for five local caches have been uploaded to the GPS unit using EasyGPS software, a bike mount for the GPSMAP 60CSx has been jerry rigged using the included belt clip and we're off. The GPS we're using offers a geocaching specific find function, and the five caches we've uploaded to the device show up, along with distance from our current position; the first is 2.73 km away.

Users are offered a number of different screen options to navigate by. Of most use on a geocache are the map overview and the compass screens. Starting out, the map view screen is the more useful of the two as it gives an accurate idea of current location relative to the cache you're searching for. The compass screen simply offers an arrow and a distance to the target, along with other info that's extraneous to the task at hand. Before narrowing in on the cache location – getting to within a few hundred metres, it's not the best option.

Following the overview map, it was simple to get to within 100 metres of the cache. From there, switching to a compass view, we completed the last 100 metres on foot. Experienced geocachers recommend walking toward the cache location, trying to get as exact a fix as possible. Then, walk past the cache, go a few metres then double back. Approach one more time from a different angle and the average of the three points should give a very good idea of where the cache is hidden.

Our first cache was a well camouflaged food storage container with forest floor covering glued to the top and sawdust stuck to the side. Hidden under a tree, it wasn't a particularly hard find; once our search was narrowed, it was a simple matter of thinking about where we would have hidden a cache were roles reversed.

Listings on www.geocaching.com give a good idea of what exactly we're supposed to be looking for. A microcache can be anything small, like a pill bottle, film canister or small food container, just enough to store a log book (or sheet) and perhaps a small writing instrument. A standard cache can be an ammunition box, a food storage container or anything weather proof that can be hidden and generally contains a log book, writing instrument and several trade items; anything small – in both size and value – fits.

The sport is built on respect for other cachers and relies on the honour system; if cachers choose to take an item from a cache, they're asked to leave something of approximately equal value. The practice of taking and leaving items seems to be aimed more at making the sport more enjoyable for kids as cachers are most likely to find stickers, small games, rubber stamps and the like.

The first find was quite exhilarating and whet the appetite for more. Marking the previous cache as found – changing the icon on the map screen of our GPS from a closed treasure chest to an open one – it was time to head out in search of another. The overview map screen showed a new cache a couple of kilometres away.

And with the excitement of our first find still front and centre, two new geocachers were born.

By Andrew Moore-Crispin

Music on the road: The latest tech

Pioneer AVIC-N3

Not all car stereos are created equal. Never has this been more apparent than when shopping for one today, where advancements in technology have opened the floodgates to a much richer music experience on the road.

From MP3 playback and multi-channel DVD-Audio to USB ports and satellite radio to iPod support and colour touch-screen displays, audio enthusiasts have never had it so good on four wheels.

To help wade through the vast number of options out there, the following is a look at a few of our picks – each with a CD player, built-in amp and a ton of bells & whistles – to keep you tapping on the steering wheel while commuting to work or enjoying a summer road trip with the family.

Ready to "Xplod"

Take a joy ride with Sony's Xplod car audio products, a new line of technology-infused decks that supports multiple audio types on burned discs, satellite radio and an auxiliary input on the faceplate for added functionality. In fact, Sony's (www.sony.ca) latest stereos – including the MEX-1GP ($349) and the Sony CDX-GT805DX ($399) – also read ATRAC3/3plus files, which translates to a whopping 500 songs on just one CD-R/RW disc. The MEX-1GP also has another trick up its sleeve: 1GB of internal flash memory and a USB port engineered into the faceplate, so when it's removed from the receiver and connected to a Windows PC, it is recognized as an external drive, ready for dragging and dropping music onto it.

Now see this

Not only can you crank the tunes with the Kenwood KDC-MP832U ($539; www.kenwood.ca) – including MP3s, WMAs, AACs and other digital audio files – but this high-end in-dash stereo also features a graphic motion sensor that lets you see the performance of your vehicle on its 64-colour fluorescent display (including horsepower, direction, gauges, stopwatch, and more). The rear USB port allows you to snap in a thumbdrive packed with tunes or connect your iPod to access its 15,000 songs and podcasts. This Sirius or XM Satellite Radio-ready deck also offers text-to-voice audio so you can hear artist info while keeping your eyes on the road (e.g. "Now playing album 'American Idiot' by artist Green Day").

Best bargoon

You don't have to sacrifice performance for price with the JVC KD-G820 ($329; www.jvc.ca), a powerful car deck with support for MP3s or WMAs (via a front-loading USB thumbstick or stored on CD-R/CD-RWs), satellite

Kenwood KDC-MP832U

radio or iPod connectivity (wireless remote included). The flip-down faceplate with 3D graphics display shows ID3 tag information, equalizer settings and personalized PICT images (a JVC exclusive). If you have deeper pockets, however, the JVC KD-AVX2 ($799) is a top-of-the-line deck with high-resolution 3.5-inch widescreen display, 5.1 DVD-Audio playback with DTS, Dolby Digital or Dolby Pro Logic II (or store more than 2500 MP3s on one DVD-R) and gold plated output terminals.

Music and more

Before you balk at the $1,899 price tag, the Pioneer AVIC-N3 Multimedia Car Deck (www.pioneerelectronics.ca) is much more than just a car stereo. The 6.5-inch retractable touch-screen can also show DVD movies to passengers (or play your favourite music on DVD with DTS and Dolby Digital support) and display turn-by-turn GPS instructions (with audio, too) to prevent you from getting lost on your summer road trips. It can also measure and display some of your car's performance specifications. The car stereo plays AM/FM radio, reads MP3s and WMAs on DVD-R/RWs and CD-R/RWs and is satellite radio-ready and iPod-ready. The AVIC-N3 ships with GPS antennas, two map DVDs, includes 11 million points of interest (such as restaurants, gas stations and hotels) and offers one year of free roadside assistance service.

By Marc Saltzman

The faces of blanket WiFi in Canada

Blanket WiFi will soon be a reality in Canada's largest city, with Toronto Hydro's announced plan to install a high-speed mesh wireless Internet network to cover Toronto's downtown core by the end of 2006.

While WiFi hotspots have existed in cafes and other public spaces for years, blanket WiFi is different. "It's like creating one very, very big cafe," says John Reid, president of the Canadian Advanced Technology Alliance.

Toronto Hydro already has a ready-made foundation for its wireless infrastructure: streetlight poles, which it purchased from the City of Toronto last year for about $60 million. Telecommunications expert Siemens began attaching network nodes to the poles in May.

Upon completion, Toronto Hydro's One Zone will cover approximately six square kilometres of Toronto's biggest business and commercial district.

Blanket WiFi will allow people anywhere within the zone's boundaries to access the Internet wirelessly simply by logging on to One Zone with WiFi-enabled devices like laptops, cell phones, smart phones, PDAs and videogame consoles.

Like currently-available WiFi hot spots, the One Zone will automatically register on the user's WiFi-enabled device and will appear in the list of available wireless networks.

"After making their selection, users will be directed to the One Zone sign in and registration page where they may log in or request a username and password," says Dino Farinaccia, Director of Marketing at Toronto Hydro Telecom.

For a price, however.

At press time, Toronto Hydro was currently still finalizing its pricing and payment methods for the service. Farinaccia says that access to the network will be free during a six month trial period. After that, users can access the service at "competitive market rates." (Rogers Wireless currently charges users of its Second Cup WiFi hotspots 15 cents per minute, and allows them to purchase prepaid allotments of $9 per hour or $15 for 24 hours.)

According to Farinaccia, blanket WiFi in Toronto will support Toronto Hydro's smart meter initiative.
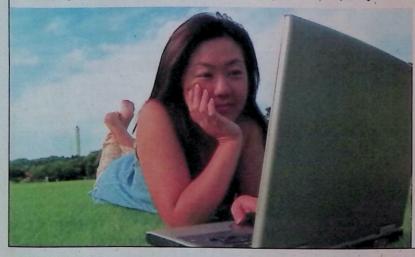
"Smart metering as an application is the ability to collect data from a hydro meter, download it into a database, and essentially provide time of day usage as to how individuals utilize energy during a given day, week or month, and it gives an hour by hour breakdown or however you want to structure it," explains Tony Cassetta, VP of information and communications at Siemens.

The principle, says Cassetta, would be similar to how telephone companies at one time organized their long distance rates based on how busy the network was, with the best discounts occurring on the least-busy days.

Business model, or wireless utopia?

Toronto is not the first city in Canada to receive blanket WiFi. A blanket point-to-point wireless network has been serving Fredericton, New Brunswick's major businesses, commercial and academic sectors since 2003.

And the most remarkable part of all? For the average citizen, the WiFi is free.

A non-profit, city-owned company called e-Novations was created to establish and maintain Fredericton's

blanket WiFi network, which is a combination of fibre and Motorola canopy point-to-point wireless. (The company is currently in the process of upgrading to a mesh network, a more sophisticated and modern system, to cover existing dead spots.)

Unlike Toronto, there wasn't much of a WiFi presence in Fredericton before e-Novations came on the scene, so e-Novations was quickly able to establish itself as the dominant WiFi presence in that city. The company is also an ISP and registered telecommunications carrier. "We offer commercial access to the network, but it also acts as the backbone to our blanket WiFi," explains Maurice Gallant, President and CEO of e-Novations, and chief information officer for the City of Fredericton.

The company sells Internet to members of the Fredericton Municipal Community Network — which includes local businesses and academic institutions — and then makes available for free the portion of the WiFi that is not being used by commercial members at any given time.

Gallant calls it a "connectivity Co-Op."

In a perfect world...

If local reports are to be believed, Fredericton is a utopian community where citizens and students can be seen chatting online and websurfing in restaurants and cafes amidst a backdrop of thriving businesses.

"WiFi is like a sidewalk. It's basic municipal infrastructure. And so is connectivity. We don't charge you to walk down the sidewalk. Why would we charge you to connect to WiFi?"

"If [WiFi] becomes a commercial venture then really you're competing with other commercial providers out there with various connectivity technologies," says Gallant.

However, Gallant acknowledges that it might be tougher to recreate the e-Novations vision in a city where there are already established WiFi competitors — like Toronto.

According to John Reid, providing Canadians with a fast, efficient connection to the Internet will be a key benefit to the economy, and will help to brand Canada as a leader in the advanced technology sector.
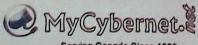
"When cities take initiatives and have bold plans... to really use technology and connectivity as one of their brand messages, that's very positive for Canada," he says.

As more and more cities (including London, Chicago and San Francisco) look to blanket WiFi, the eyes of the world are on these two Canadian cities and the two very different blanket WiFi models that they offer. Whether the future will hold citizens basking in the co-operative glow of free WiFi, or squabbling telcos vying for airwaves and marketshare, is yet to be seen.

By Erin Bell

Where to WiFi

Looking for a WiFi hotspot near you? Check out these directories:

www.wi-fihotspotlist.com/browse/ca

www.jiwire.com/browse-hotspot-canada-ca.htm

www.fatport.com/locations/

www.wifinder.com/

www.totalhotspots.com/directory/ca

Test Lab: In-car global positioning systems

The global positioning system (GPS) and the receivers that utilize it are revolutionizing the way we navigate.

They replace the windshield-obscuring, argument-inducing and origami-folding ways of the paper map with turn-by-turn directions, fairly accurate predictions of the travel time involved (barring traffic and construction – though that's in the works too) and points of interest along the way.

GPS has replaced the post-folding map paradigm too. Services like MapQuest, Yahoo! Maps and Google Local are useful but can't compete with the on-the-fly route calculation of a GPS device.

There are several categories of GPS receiver: in-car systems are likely the first that come to mind. However, the technology has found a niche in nautical applications, fleet management systems for things like taxis and delivery services and handheld systems designed for outdoors use such as hiking and camping.

For our tests, we concerned ourselves with one of the major categories: in-car systems. With in-car GPS units, battery life takes a back seat to accessories. Things like in-car power adapters, well thought out cradles, ease of menu navigation, screen readability and enhanced functions like points of interest and traffic updates (where available) take precedence. In fact, the battery is only really put to use when the car isn't running or when the GPS system is removed from the car; taken in to a rest stop to examine progress and plan the next stops in a route, for example. Realistically, we're only likely to need a couple of hours of battery life as the vast majority of the

time, the system will be navigating as opposed to planning. Added features like altitude measurement are of limited use to most users, but are often included.

Mio Digiwalker C310

www.mio-tech.com   Estimated price: $760   Battery life: 4.5h

Size: 110 x 77 x 20 mm   Weight: 170 g   WAAS: no

Points of interest*: Not specified   Expandable storage: SD/MMC

Screen size: 3.5-inch   Extras: MP3 playback

Cold start: 60 sec   Warm start: 3 sec

Mounting hardware: Suction mount and claw cradle

Accessories included: Windshield mount, cradle, car and home power adapters, USB cable

The Mio is a simple to operate GPS system built on top of Windows CE and housed in a simple and attractive casing. The device avoids the menu overload that can sometimes plague GPS systems that want to proudly demonstrate all their myriad abilities on the first menu screen users see.

Instead, upon cold starting the device – a quick and painless process; satellites were picked up and we were ready to roll in about one and a half minutes – users are greeted with a simple four-item menu with entries for inputting an address, favourites, points of interest and map look and feel. There's also a bottom menu for going straight to the map or playing MP3s from the top-mounted SD card slot and via the small speaker on the rear of

the unit.

Accessing settings, changing maps (Canada and the US are included) or accessing other deeper features like touch-screen alignment and backlight level.

The 3.5-inch touch screen makes data entry simple, and commonly used functions like volume and deeper route info are available directly from the map screen.

Inputting address data using the touch screen takes some getting used to.

The keyboard is laid out from left to right alphabetically, and with no option for changing the interface to a more familiar QWERTY interfaces, can be confusing. Also, inputting the same letter consecutively works strangely; if users tap the same letter key twice in rapid succession, the character won't be input twice but rather, once in capital. While this strange character entry convention isn't a big deal, I can't in good conscience recommend this device to people living in Mississippi.

On the plus side, adding an address as a favourite is a very simple affair.

The Mio C310 comes with a plastic claw-style holster that attaches easily and securely to the device. The holster in turn locks in to a strong suction telescoping and swiveling windshield mount that installs easily. Also included is a vehicle power cable and charger and regular plug charger.

Like many of the in-car GPS systems tested, the Digiwalker – while it navigates using latitude and longitude readings – doesn't give access to users to navigate to a specific lat/long point. This makes it difficult when navigating to rural areas. Ontario Provincial Parks, for example.

Magellan RoadMate 3000T

Magellan RoadMate 3000T

www.magellan.com   Estimated price: $675   Battery life*: 6hr
Size: 122 x 97 x 36 mm   Weight: 245 g   WAAS: no
Points of interest*: 6 million   Expandable storage: SD/MMC
Screen size: 3.5-inch   Extras: Optional TrafficKit, MP3 playback
Cold start: 40 sec   Warm start: 3 sec
Mounting hardware: Windshield suction mount
Accessories included: Car and home power adapters, mount, USB cable
Magellan's RoadMate 3000T is a well thought out GPS for use in a vehicle. It

uses a touch-screen interface but gives access to key device functions in the form of hardware buttons mounted to the left and right and below the 3.5-inch touch screen along with two large shoulder buttons for zooming in and out.

As users drive along, they are presented with a default overhead view. However, as they approach a turn or waypoint in the route, the device pops up a "TruView" turn preview that gives a little more detail on the maneuver ahead.

The device offers 4GB of storage and allows for a greater library of maps, music or whatever else users decide to cram on the thing. An SD / MMC card slot allows for further expansion.

The "SmartVolume" feature increases the voice prompt volume above speeds of 45 mph (about 72 km/h) to cope with rising cabin noise while the Night View switches the screen from daylight neutral tones to darker blues, reds and purples for ease of reading the screen and to preserve night vision.

A sturdy windshield mount suctions to glass and swivels at two points. The fact that it doesn't telescope means users might have difficulty finding optimal placement.

On the road, the device scales its voice prompts and instructions to the speed of driving, giving plenty of notice before turns.

As with other vehicle mounted GPS receivers that play MP3 files, the device suspends music playback to issue commands.

A neat touch: rather than turning the device completely off at a rest stop or even over night in a hotel, the power button defaults to a sleep mode which enables the device to get a quick fix on satellites.

Garmin Nüvi 350

www.garmin.com   Estimated price: $850   Battery life*: Up to 8h
Size: 98 x 74 x 22 mm   Weight: 145 g   WAAS: yes
Points of interest*: Not specified   Expandable storage: SD/MMC
Screen size: 3.5-inch   Extras: Vehicle mount, software Picture viewer, "TravelKit" (currency and measurement converter, world clock etc.)
Cold start: 90 sec   Warm start: 5 sec   Mounting hardware: Suction mount
Accessories included: Car and home power adapters, suction vehicle mount, USB cable, carry case
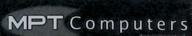
Garmin's Nüvi 350, extraneous umlauts aside, is a tiny form factor in-car GPS that can also be used in limited on-foot jaunts in and around the city. To that end, it includes a Pedestrian setting, along with bicycle, truck and even bus settings.

It's small and lightweight with a flip-up antenna. The unit uses a unique dashboard mount that interfaces with a terminal on the back of the device and accepts power from the included cigarette lighter adapter.

As is the new paradigm, the Nüvi 350 can play MP3 music through its tinny speakers, which are better suited to voice navigation. Users are afforded 700MB of storage on board, expandable via SD or MMC

card. Music is interrupted when a voice prompt needs to be issued. While any of the MP3-playing GPS devices can play audiobooks with a little user intervention, Garmin had the good sense to position its device as an audio book player, and offers Audible support, including a menu item for playing books purchased through the service.

The Nüvi 350 switches automatically between night and day modes depending on the time of day, offering an optimal map viewing for conditions. On the road, it voices street and highway names, which makes it much easier to navigate without needing to look at the screen.

Users are presented with options for extending the functionality of the device and can purchase software upgrades through the Garmin site that give access to dictionaries and language guides – with common phrases voiced digitally – for tourism, along with Travel Guides that, while expensive, offer new maps and points of interest, along with restaurant and hotel ratings on a star scale.

Lowrance iWay 350

www.lowrance.com   Estimated price: $500   Battery life: 15h
Size: 114 x 100 x 65 mm   Weight: 247 g
Points of interest*: 5 million   Expandable storage: SD/MMC
Screen size: 3.5-inch   Extras: FM transmitter
Cold start: 40 sec   Warm start: 10 sec
Mounting hardware: Flexible windshield mount
Accessories included: Windshield mount, protective face cover, car power adapter

The Lowrance iWay 350 incorporates and 4GB hard drive for map and MP3

storage and, along with FM transmission that plays music and navigation commands over your car stereo, it's unique in this roundup.

Navigation is logical and turn-by-turn, though the system doesn't voice street names, only turn directions and highways where applicable.

The iWay 350 is among the heaviest of the GPS units tested, owing at least in part to the fact that it incorporates two Li-ion cells to give it its impressive (but not fully tested) 15 hours of battery life.

A windshield suction mount is included in the package, as is a protective face cover. The mount consists of a locking platform that the device sits atop. The problem here is with the flexible shaft of the mount. It supports the device without issue and while the gooseneck system for positioning the device optimally does allow for more flexibility, it also allows car vibrations to be translated directly to the device, causing it to shake perceptibly in our... less than top of the line test vehicle.

The 3.5-inch touch screen takes care of all the menu navigation while a safety feature locks the GPS screen so users can't make adjustments while driving. To turn off this safety lock (for passengers to be able to access menus while in transit, the documentation says) the car must be at a full stop, otherwise the screen won't accept input. It's frustrating if your passenger can't access any menus while the car is in motion, but it's a smart safety feature, though one that will likely be disabled permanently by most drivers.

By Andrew Moore-Crispin

*Manufacturer-supplied spec

Turning light into electricity

Portable solar chargers power handheld devices

Solar power, or more accurately, the production of electricity through photovoltaic cells, has been around for 30 years, but the technology once associated with massive roof-sized panels and clumsy "alternative energy" cars is now powering digital audio players, cell phones and PDAs as well.

"[Photovoltaic cells] are finally coming to a point where they're becoming efficient enough that we can use them for smaller-sized panels that put out more power," says Don Doney, President of MySoldius.

Another development that has made solar chargers much more practical is that most handheld devices now use lithium ion batteries, which can accept partial charges without damaging the effectiveness of the battery.

"In the past, you used to have to fully charge and fully discharge the battery in order to make it so it didn't have a memory," explains Doney. "But now with the lithium ion batteries you can charge them for an hour, for half an hour or for two hours, and you still don't hurt the battery."

When exposed to sunlight, the solar panels on a solar charger begin converting solar energy into electricity. Depending on the type of charger, that electricity is either transferred directly into the connected cell phone, PDA or MP3 player, or is stored inside the solar charger itself for transfer at a later time.

Both systems have their advantages. Direct-charging is faster, but solar chargers with their own battery can store electricity for months. You could charge the solar panels during the day, for example, and then transfer the energy to your handheld device at night.

Wireless

Portable solar chargers ship with various "tips" to accommodate a variety of devices and their respective voltages, with additional tips generally sold separately.

The biggest downside to solar power is that it's not consistent. Environmental filters like clouds, smog, tinted windows and shadows from tall buildings reduce the charger's effectiveness. Also, the sun's intensity (and therefore the power of the charge) changes depending on the time of day and season – in case you were wondering, a summer's day at noon is optimal.

There's also some bad news for Canadians: According to environmental measurements, we're at a disadvantage when it comes to solar power because the solar intensity in our region is below average. (Canada receives between 1-3 Kilowatt-hours of solar energy per square metre per day, as compared to 4-6 KWh/m2/day for much of North Africa, for example. (Visit www.solio.com/v2/support/solar-intensity.html to compare solar intensity maps for regions worldwide.)

Nevertheless, there are some pretty significant advantages to solar power as well, not the least of which being that it's free. It's also environmentally friendly, and gives users the ability to charge their devices in areas where they don't have access to traditional power outlets, such as campgrounds. Because they're designed to accommodate many different devices and voltages, solar chargers can act as portable universal chargers in a pinch, meaning you don't have to carry around multiple power cables for multiple devices. (A few solar chargers, including the Solio and Proporta chargers in the following roundup, actually ship with AC adapters for this very purpose.)

Soldius1
www.mysoldius.com
US$89.99 (Mobile Phone kit); US$99.99 (iPod kit); US$109.99 (Mobile Phone and iPod kits)
Method: Charges device directly
Charging time (direct sunlight): 2-4 hours
Interface/cables: mini USB port; comes seven adapter tips for various devices
Output power: 6.58V
Weight: approx. 115 grams
Dimensions: 110 x 75 x 10 mm
Compatibility: iPod Mini, Shuffle, Nano, Motorola ROKR, Creative Zen Micro, BlackBerry; wide range of Nokia, Sony Ericsson, Siemens, Samsung, Motorola phones
Notable features: Comes in six colours (black, pink, green, blue, red, and white)

SolarStyle SC002
www.solarstyle.com
US$55.99
Method: Both direct-charge and battery storage
Charging time (direct sunlight): approx 1.5 hours
Interface/cables: Various tips
Output power: 3.6V, 5.5V
Weight: 138 grams
Dimensions: 108 x 72 x 21 mm
Compatibility: Motorola, Nokia, Samsung, Sony Ericsson phones, Game Boy, mini USB and 4-pin cross connector included. Connectors for additional devices including Bluetooth accessories, garmin GPS

systems, Palm PDAs and other mobile phones can be purchased from the website for US$7.99 each.

Solar Charger for Mobile Devices

www.proporta.com

US$59.95

Method: Both direct-charge and battery storage
Charging time (direct sunlight): approx 3-4 hours
Interface/cables: USB
Output power: 3.6 V – 500mA
Weight: 88 grams
Dimensions: 88 x 60 x 23 mm
Compatibility: A range of smartphones and PDAs including HP, Dell, Palm, Sony Ericsson, Nokia and BlackBerry. Company claims it can be used to charge most devices that use a USB charger.

Solio

www.solio.com

US$99.95

Method: Both direct-charge and battery storage
Charging time (direct sunlight): 8-10 hours to charge internal battery; 4-6 hours for direct charging
Interface/cables: Various tips
Output power: 4-12V – 0 – 1 Amp
Weight: 165 grams
Dimensions: 120 x 65 x 34 mm (when closed)
Compatibility: Wide range of Nokia, Motorola, Samsung, Sony Ericsson, Siemens phones. Numerous BlackBerry, iPAQ, Palm, Sony Clie and TREO smart phone/PDAs. iPod and iRiver MP3 players. Game Boy, Nintendo DS and PSP. Garmin GPS units. A variety of digital cameras that charge via mini USB.

By Erin Bell

Moving to Mac

On the Move with the MacBook, pt. 1

The last couple of years haven't been particularly kind to Apple fans who needed mobility. Despite Apple desktop computers successfully making the transition from the G4 to the G5 processor, the company was unable to create a mobile product using the G5 processor, effectively leaving mobile users a generation behind.

There were a few reasons for this technology lag, but the most important were heat and power consumption: cramming a G5 processor into a notebook would suck the battery dry in a ridiculously short period of time, simultaneously generating enough heat inside the casing that everything might start to melt. Apple was forced to use the older, slower G4 processors inside the iBook and PowerBook lines, while power apps like PhotoShop and Final Cut Pro all but required a G5 processor. Conundrum.

Apple was finally able to address the issue this year with the transition of its entire product lineup from the PowerPC processors (G4 and G5) to the newest generation of Intel processors (Core Duo and Core Solo). The company stated that the new Intel processors were capable of up to five times the speed of the previous PowerPC processors, despite only a moderate jump in actual clock speed. Even better news was that these new processors would also go into the company's notebooks.

The MacBook Pro

Designed to replace the PowerBook line, the MacBook Pro sports a nearly identical design to the previous generation PowerBook. The biggest change is under the hood, with the creaky old G4 processor replaced by a dual-core Core Duo processor rated at 2GHz or higher. The new machines also sport a faster video card with more onboard memory, hard drive sizes up to 120GB, and the ability to put 2GB of RAM into the machine. In short, the new MacBook Pro models actually have specs that are comparable to Apple's old

high-end desktop models, but in a notebook form factor.

There were a few other changes. First, the power cord has a new magnetically-attached connector known as the MagSafe, to prevent the Mac from going flying if someone trips over the cord. Second, the PC Card slot is gone from the 17-inch model, replaced by the smaller ExpressCard slot. And for multimedia fans, not only has an iSight camera been embedded into the bezel right above the screen, but the MacBook Pro also comes with a remote control, just like the new iMacs.

The MacBook

One thing that surprised people about the MacBook was the decision to use the higher-performing Core Duo processor instead of the Core Solo. From a processor perspective, that means the MacBook is almost on par with the higher-end MacBook Pro, making it one heck of a deal at nearly half the price.

That said, there are definitely a few areas where the MacBook saves some money, and the biggest of those is in the graphics department: while the MacBook Pro has a discrete graphics component with 128MB of memory,

the MacBook uses Intel's built-in graphics, with only 64MB, which is pulled from main system memory. Another area is in the screen: at present, the MacBook is only available with a 13-inch screens.

The biggest obvious change with the MacBooks, when compared to the iBooks, is the redesigned keyboard. The new MacBook keyboard has more space between the keys, which might mean a bit of practice is required before user get comfortable with it. More crucial is Apple's decision to sink the keyboard further into the body of the notebook, preventing it from rubbing against (and damaging) the screen when the notebook is closed.

The MacBook models feature a few of the new features found on the higher-end MacBook, including the embedded iSight camera, remote control, and the new MagSafe power connector. And for those who are looking for something a bit different, the top of the line MacBook comes with a black case instead of white.

We'll put both new models to the test next month, in part two.

By Sean Carruthers

Compare the specs of the MacBook and MacBook Pro families with this handy chart

	MacBook	MacBook	MacBook	MacBook Pro	MacBook Pro	MacBook Pro
CPU	1.83 GHz	2 GHz	2 GHz	2 GHz	2.16 GHz	2.16 GHz
Screen size	13.3-inch	13.3-inch	13.3-inch	15.4-inch	15.4-inch	17-inch
Screen resolution	1280x800	1280x800	1280x800	1440x900	1440x900	1680x1050
RAM	512 MB	512 MB	512 MB	512 MB	1 GB	1 GB
Max RAM	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB
Hard drive	60 GB SATA	60 GB SATA	80 GB SATA	80 GB SATA	100 GB SATA	120 GB SATA
Optical	Combo	Superdrive	Superdrive	Superdrive	Superdrive	DL Superdrive
WiFi	11g	11g	11g	11g	11g	11g
Ethernet	10/100/1000	10/100/1000	10/100/1000	10/100/1000	10/100/1000	10/100/1000
Modem	no	no	no	no	no	no
Bluetooth	2.0	2.0	2.0	2.0	2.0	2.0
USB ports	2	2	2	2	2	3
FireWire ports	1x400	1x400	1x400	1x400	1x400	1x400, 1x800
Video out	mini-DVI	mini-DVI	mini-DVI	dual-link DVI	dual-link DVI	dual-link DVI
Graphics memory	64 MB	64 MB	64 MB	128 MB	256 MB	256 MB
Size (cm)	32.5x22.7x2.75	32.5x22.7x2.75	32.5x22.7x2.75	35,7x24.3x2.59	35.7x24.3x2.59	39.2x26.5x2.59
Weight (g)	2.36	2.36	2.36	2.54	2.54	3.1
Colour	White	White	Black	Aluminum	Aluminum	Aluminum
Price	$1,249	$1,449	$1,649	$2,199	$2,799	$3,099

Keeping it clean: PC utilities

Downloadable PC utility vendors are constantly vying for our dollars with claims that our computing experiences will be safer or more efficient or less frustrating if we use their software. Distinguishing duds from truly useful apps is no easy feat, but HUB:Digital Living has tested and can vouch for all of the utilities described below. Each does an admirable job of what its publisher claims it will do, whether it's cleaning registries, creating disk images, shredding files or recovering data. You just have to decide if you need any of these things done.

Registry Mechanic (www.pctools.com/registry-mechanic)
File size: 3.43MB   Price: $33

Registry Mechanic is one of the simplest and most reliable ways to clean your registry. What's a registry? It's a database found on Windows operating systems that stores information about programs, hardware, preferences, and other aspects of your system. A poorly maintained registry can negatively impact your machine's performance, slowing down startup processes or even crashing the system.

Registry Mechanic scans your registry before providing a list of categorized errors. Each error is assigned a priority code and a proposed course of action for rectification—typically involving deletion of the offending file. It also shows you the location of the file, allowing advanced users to delete the file manually. I ran Registry Mechanic on a computer with a month-old Windows XP installation and it found 149 errors. Fixing these errors substantially improved the startup time of the machine.

The demo version is free, but it automatically repairs only a handful of errors. Coughing up about $33 will ensure that your registry is always clean as a whistle.

SafeIT File Shredding 2006 (www.safeit.com/products/shredding)
File size: 2.78MB   Price: $33

Got files you want permanently destroyed? Windows' recycle bin won't do the trick — plenty of easy to use applications can recover deleted files in a snap (such as Active Undelete — the next utility discussed on this list). The only way to truly destroy a file is to use a file shredding program, like SafeIT File Shredding 2006.

This handy little utility can safely and permanently remove any file from your PC (well, technically, the files aren't destroyed but rather encrypted using one of three selectable encryption algorithms). In browse mode users can pick and choose the files they want shredded. Recycle bin mode permanently destroys any files residing within the bin. There's also a mode

for shredding all the temp files on your machine as well as a disk space saving mode that targets potentially unneeded files.

The demo version is fully functional, but it expires after 30 days. You can also upgrade the utility to include SafeIT File Encryption 2006, an add-on that allows users to create their own encrypted, self-extracting files.
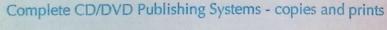
Active Undelete Data Recovery (www.active-undelete.com)
File size: 2.02MB. Cost: $44

We've all deleted files by accident, but many people aren't aware that these files aren't actually gone. Rather, they're placed in a queue to be written over. That means they're recoverable – assuming you have the right utility.
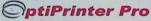
Active Undelete Data Recovery is just such a utility. It can scan your computer to identify deleted but recoverable files. Once located, users can choose to restore these files to their original folders or place them in new folders. You can even preview certain kinds of files beforehand to ensure you've located the correct file.

In my tests I found a wide variety of supposedly deleted files and restored them with a couple of clicks. The interface is a bit clunky, but the application's usefulness is hard to deny – especially for those of us prone to overzealous desktop cleaning frenzies. A demo version is available, but it won't undelete files greater than 64KB.

Acronis True Image (www.acronis.com)
File size: 32MB   Cost: $55

There are few more reliable or comprehensive ways to back up your data than creating a disk image. And there are few better disk image utilities than Acronis True Image, a slick and simple application designed to look and feel like an extension of Windows XP.

True Image lets even novices clone an entire hard disk – including data, applications and operating system – with relative ease. It also provides functionality to check disk images for errors and lets you plug into and out of the disk to search for and access data as though it were a local drive. What's more, it delivers the ability to backup individual files and folders,

schedule regular backup times, and even create secure zones on your local hard disk that cannot be accessed by other applications – in essence an airtight storage area that will never be affected by malware or system failures of any kind.

In short, True Image offers enough data backup and recovery options to satisfy almost any home user. The trial version is fully functional, but lasts only 15 days.

By Chad Sapieha

High-def movies debut in Canada

But which camp will consumers side with?

If you've already invested in an HDTV capable of displaying up to 1080 lines of resolution instead of your DVD's 480, perhaps it's time your movies caught up to the display they're being watched on.

The time is right for a new disc format, which means new players to display said format. The problem facing consumers right now is that there are two of them vying for living room supremacy. In keeping with industry tradition, neither format is compatible with the other and, further fulfilling tradition, it's unlikely both will flourish... or even survive.

Because both of these technologies can store more data on the same-sized 12 cm disc (read by a blue laser instead of your DVD player's red laser), HD-DVD and Blu-ray Discs can deliver true HD video clarity, better-sounding audio tracks and a host of other neat extras.

Each format, however, holds its own advantage. Blu-ray has more storage space, is enjoying more valuable Hollywood studio support and will be included in Sony's upcoming PlayStation 3. HD-DVD is less expensive to manufacture and thus cheaper for the consumer. Also, while both formats can offer backwards compatibility with your existing library of DVD movies, this backwards compatibility is not required for Blu-ray standard designation as it is for HD-DVD players.

PC makers are also poised to take advantage of these larger capacity discs. Dual-layer HD-DVD discs can hold up to 30GB while dual-layer Blu-ray discs can hold up to 50GB of data, be it pictures, movies, system backups or other such tasks requiring maximum data space in a minimum physical space. Both formats allow users to burn considerably more information on them compared to the 8.5GB maximum with current dual layer recordable DVDs. As consumer demand for digital storage continues to grow, the PC industry is ripe for a new standard too.

Believe the hype?

Toshiba, one of the key backers of HD-DVD, has just launched Canada's first high-definition players, the HD-A1 ($699), and the more feature-rich HD-XA1 ($999).

While most consumers may want to wait for one format to become universally accepted (or for prices of HD-DVD players to drop down to a couple of hundred dollars), here's what early adopters can expect from the HD-XA1, Toshiba's flagship player.

Sony 60-inch Grand WEGA

While larger than a traditional DVD player, the HD-XA1 is an attractive black machine with a motorized front panel that folds down to reveal the disc tray and buttons.

Fans of Tom Cruise have never seen him in as much detail as they will in the HD-DVD copy of the Warner Bros. historical epic, The Last Samurai ($31.99). Viewed on a new 60-inch Sony HDTV, the highly-detailed picture was clearly superior to the same flick on DVD, whether during the close-quarter fighting sequences or the wider landscape shots.

The 5.1 surround sound audio track (dubbed Dolby Digital-Plus) was equally impressive; the player also supports films encoded with Dolby Digital, Dolby True HD (two channels), DTS and DTS HD audio.

The HD-XA1 can also "up-convert" your existing DVDs to output resolutions of 720p or 1080i, which was visibly noticeable on films such as Peter Jackson's King Kong and the upcoming re-release of Napoleon Dynamite.

While the HD-XA1 offers numerous output options, such as composite and S-Video jacks (for non-HDTV sets) and component cables, the HDMI cable (included) yields the best video and audio quality.

Unlike your DVD player, HD-DVD players also let you call up the disc's menus — say, to change language tracks or add director's commentary — while the film runs in the background. The menu options float up near the bottom of the screen and let you make changes without leaving the movie.

Another option is to connect the player to a broadband modem to access online content.

Some beefs

While we loved the look and feel of the motion-activated remote, which automatically turns on a backlight once it's picked up, there

HD-DVD disc

were a couple of beefs with its functionality.

For one, the eight-way directional button was somewhat cumbersome to use; for example, it wasn't unusual to press the Right arrow button more than once for the unit to accept the command. Another issue is a Resolution button that changes the video output during the film (for example, from 720p to 1080i). The issue here is that pressing the button resets the film to the beginning, and the button can be accidentally pressed.

Overall, however, the HD-XA1 lives up to its promise in delivering movies in stunning HD video quality. Home theatre enthusiasts who are willing to invest in this technology won't be disappointed with this first-generation unit. That said, only a dozen or so films are currently available. The price of players is sure to drop over time, which may make all but the most well-heeled early adopters pause for thought until consumer buying power pushes the price of these impressive players lower.

The fundamental concern for any early adopter is that their chosen format may be left in the dust for any one of myriad reasons. We won't talk about Laser Disc, Betamax or any other formats that were edged out despite being arguably superior to their competition.

The outcome of the impending battle is as yet impossible to predict; Blu-ray may edge out HD-DVD as the universally adopted standard, leaving HD-DVD adopters in the virtual dust. By the same token, HD DVD may outplay Blu-ray, making early adopters seem remarkably forward thinking in a few years.

At the end of the day, consumer support decides the winner.

By Marc Saltzman

This sound's important

While it's a good idea to make sure your picture is as good as possible, make sure your sound is too. Properly calibrated sound can add inches to your display as it is a key ingredient for the suspension of disbelief. In fact, I now believe my 13-inch screen is 50 inches with the addition of a properly calibrated surround sound system and a pair of binoculars.

Hello, is this thing on?

The starting point for setting up your system is placing the speakers in the correct positions, pointing them in the right direction and making sure they have the correct polarity before calibrating. For example, if you have the left and right channels reversed, screen objects will move in one direction and their corresponding sound in the other. Very art house, but not usually desirable and, yes, it happens. Also, all speakers should point toward the listening position, ideally at ear level. This guarantees that there is no high frequency drop-off as tweeters tend to be very directional.

The left and right speakers should be 30 degrees off the centre axis and the rear speakers placed all the way to 110 degrees on either side. They should follow a perfect circle around the listening position. If you can't place your speakers in a circle around the listening position you will have to add delay to compensate. This means the left and right speakers are not flat against the wall but stick out slightly and are angled to the centre. This circular placement is an ideal and not always attainable. The placement of the subwoofer is not very important other than to avoid putting it in a corner or against a wall. Placement against a wall will make the bass sound "boomy" which is cool for about 10 minutes.

Lastly, you can tell that you have a polarity or "phase" problem when certain frequencies sound muddy when running test tones across all the speakers. One speaker will be moving in the opposite direction of another, cancelling out sound waves. If this is the case, check your speaker wiring for continuity.

Now you can actually start calibrating.

Quite a few receivers offer an auto-calibration system where you place the supplied microphone where you normally sit. This is very handy but it's common for high-end receivers and pre-amps to require you to break out the measuring tape and SPL (Sound Pressure Level) meter.

Occasionally, auto-calibration can be fooled and you'll have to do it manually anyway. You'll have to ferret around the internet to find one now for under $100. In either case, make sure the calibration mic or SPL meter is pointing up to the ceiling at "ear" height and in the place where you plan to sit. Also, make sure you're not blocking any of the speakers during the test sequence or reflecting any sound to the mic with your body. Fortunately for me, my body absorbs sound due to high fat content but you may not be so lucky.

Manual or automatic, calibration is done to make sure that all the speakers sound equally loud and the sound arrives at the proper time. This isn't an issue if you put all the speakers in a perfect circle around the listening position but, again, this is usually not possible and adjustments need to be made. Use the measuring tape to measure the distance from your listening position to the closest speaker. Then measure the others. For every extra foot of distance to another given speaker, add 1 millisecond of delay to that speaker. This can get a little more complicated if your receiver doesn't allow you to set delay for each separate speaker and can cause some limitations in speaker placement.

The ideal listening volume, according to George Lucas's THX, is 75 dB SPL at the listening position. So set the SPL meter to the 70 or 80 dB level with a "C" weighting with "slow" response. Adjust the volume so that the test tone is within the ballpark and not off the scale. Run the test that uses pink noise and adjust the volume level for each speaker separately except for the subwoofer.

Finally, test the subwoofer using pink noise which falls within the frequency capabilities of it, usually under 200Hz.

Well, I have to stop writing as the cops are here due to another noise complaint. Apparently, sound testing makes the neighbours testy.

By Andrew Carruthers

Important Sounding Terms

Term	Definition
White Noise:	Random sounds of equal volume across all frequencies.
Pink Noise:	Random sounds made across all frequencies where the volume drops by half for every octave up. Also, Harper's term for a question from the press gallery.
THX:	George Lucas's company that sets standards and certifies audio/visual equipment.
Phase:	Point where a wave is at a particular time such as crest or trough.
Sound Pressure Level (SPL):	The physical measurement of sound volume.
Tweeter:	Small speaker designed to replicate high frequency sound.
Woofer:	Large speaker designed to replicate low frequency sound.

Learning Linux

After much malware, spyware, virus run-ins, countless blue-screens and full-system formats, I'm switching.

Not the first switch that may come to mind from a Windows-based PC to a Mac. Rather, from a Windows PC to a Linux distro.

Truth be told, "switching" isn't an accurate description of what I'm doing. It's best described as experimenting. Windows will remain on both my home and office PCs. However, an older model laptop that I've been relegated to using since mine went mysteriously missing on a recent flight will be loaded up with a Linux distribution.

Edit: this older model laptop might be useful as a paper weight, but it isn't up to the task of running a GUI based Linux installation it seems. Rather, my home desktop, an AMD Athalon Sempron 3100+ 1.80GHz, 1GB of RAM will run a dual-boot configuration with Windows XP and Ubuntu.

Step one is choosing the distro; I've experimented with "Lindows" – later renamed Linspire after some legal run-ins with Microsoft – and found it relatively simple to use but bloated, requiring beefier system specs than Windows XP. Also, while I was impressed by the overall polish of the graphical user interface (GUI), the OS ran painfully slowly on a PC that met the minimum specs.

There are some issues to be dealt with in Linspire. It's designed as a simple user interface for the powerful Linux engine in the background, and as such, is designed for a more general user not interested in playing with TAR balls or using confusing code in a command prompt to get things done. Despite its target market, it logs users in at the root level, giving them unmitigated access to... well, everything.

Choices

There are a great many options out there. As the Linux core is open-source, developers can take the source code and add, augment and expand it as they see fit; they can pare it down, beef it up, add a graphical user interface or whatever else strikes their fancy.

The sheer number of distributions – some very similar to each other, some a radical departure – makes choosing a distro a tough decision. A check of DistroWatch.com, the unofficial online log of all the various distributions available, will attest to that. There is no clear choice that is a fit for every user.

Due to its groundswell of support, extensive user-driven documentation and the fact that there are no "professional" or other such paid versions (not to mention the recent, quickly squashed but thought-provoking Google "Gubuntu" rumours), I opted to use Ubuntu.

There are several flavours of Ubuntu available including Ubuntu, Kubuntu and Edubuntu. They're all variations on the same theme: a free, relatively slick GUI shell atop Linux, designed with end-users in mind and offering access to a variety of standard programs like Firefox for web browsing and OpenOffice.org for word processing, spreadsheets and a variety of other office applications.

Ubuntu is based on the GNOME while Kubuntu is based on KDE. I'm not entirely sure what either of those are or what exactly the difference might be between them (all in due time, I'm sure). What I have been able to ascertain is that both KDE and GNOME are graphical user interfaces (GUIs) that sit atop Linux and pretties things up. Also, KDE and GNOME are based in different programming libraries. KDE uses QT and GNOME uses GTK.

Different applications are programmed using different libraries. The best way to decide which is best for a particular user is for them to examine the Linux programs that they use the most (somewhat difficult on a first in-depth experimentation with Linux), determine which library they were programmed with and let that guide the decision.

In the end, I decided to go with the GNOME-based Ubuntu (as opposed to Kubuntu, based on KDE).

Step two is actually installing the thing. Ubuntu is in version 5.10 at the time of writing. Updates are delivered every six months through an 18-month lifecycle.

The current version is scheduled to be retired according to Ubuntu's product life cycle. The new version 6.06 named Dapper Drake will be officially released for existing users to upgrade.

The OS in all its many versions is available in configurations for x86 processors and most AMD processors along with a version designed for 64-bit AMD processors and a PowerPC-based Macintosh distro. All of these are available as a disc image (ISO) to install in either a dual-boot or solo configurations. A nice touch is the "Live" images too which allow users to experiment with the OS without having to alter their computer. The Live install is designed to leave no trace of itself once the computer is rebooted. How's that for having your cake and eating it too.

By Andrew Moore-Crispin

Business Directory

World Cyber Games PC

From swimmers' goggles to hockey players' skates, having the best tools has a big impact on an athlete's performance. Cyber-athletes are no exception. Some of the best gamers in the world will compete for prizes and glory at the 2006 World Cyber Games in Monza, Italy. Stephan Richard, the executive director of World Cyber Games Canada, gave us a rundown of the specs of the high-end gaming machines the athletes will be using.

The Machine:
Dell Dimension 9150
Price: around $2,000

Processor:
- Intel Pentium 4 processor supporting HT [Hyper-Threading]Technology
- Frequency: 3.40 GHz
- Front Side Bus (FSB): 800 MHz
- Intel NetBurst microarchitecture
- 2MB Level 3 (L3) cache
- Performance is improved by a Level 3 cache (allowing the processor to access layers of frequently-used data instead of dipping into the computer's main memory.
- Intel's patented hyper-threading enables the computer to schedule two tasks at the same time. During the "down time" of the first task, the computer initiates the second task. The result is faster performance, which Intel claims improves by as much as 30 per cent.

Storage:
- Serial ATA Hard Drives
- 1TB (terabyte = 1 trillion bytes) – 2 drives x 500GB

Memory:
- 2GB Dual-Channel DDR2 667MHz SDRAM – 2 or 4 DIMMS
- Dual-channel allows data to travel in two streams across the motherboard instead of one, thus reducing bottlenecking and increasing speed and performance.

Operating System:
- Windows XP Professional Edition

Motherboard
- Based on NVIDIA nForce4 SLI X16 MCP chipset
- Price: Around $75 - $150
- SLI technology allows two video cards to run in parallel, thus effectively doubling the amount of processing power devoted to graphics.

Graphics Processing Unit (GPU):
- NVIDIA GeForce 7900 GTX
- Price: About $700
- The 512MB GPU supports image resolution up to 2560 x 1600, HD gaming up to 1900 x 1200, and support for microsoft's DirectX 9.0, Shader Model 3.0 and High Dynamic Range (HDR) lighting effects.

Audio:
- Creative Sound Blaster X-Fi XtremeMusic
- Price: $140
- Dolby 7.1 support
- Stereo output: 109dB
- 128-voice support
- X-Fi 240bit Crystalizer

This soundcard features a dedicated "Gaming Mode" and uses the X-Fi XTreme Fidelity audio processor to deliver a 15 per cent performance boost over standard motherboard-based audio, according to the company.

Monitor
- Samsung SyncMaster 931BF monitor
- 19-inch
- Pixel Pitch (mm): 0.294
- Brightness: 300 cd/m2
- Contrast Ratio: 700:1
- Response time (milliseconds): 2
- Maximum resolution: 1280 x 1024

What are they playing?
The five PC games that are officially sanctioned events at the 2006 World Cyber Games are Counter Strike 1.6, StarCraft BroodWar, WarCraft 3: The Frozen Throne, FIFA 2006 and Dawn of War: Winter Assault.
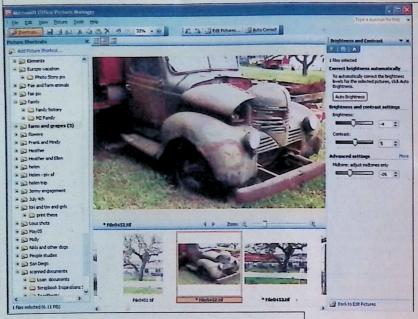
By Erin Bell

Office: Hidden imaging gems

When you look for graphics software or scanning tools, your first thought probably won't be Microsoft Office, though perhaps it should be. The following tools all come with Microsoft Office 2003 although they're not easy to find. I'll show you what these tools are, where to find them and how they can help you work more effectively.
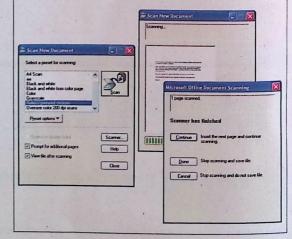
The tools are accessible by choosing Start, All Programs, Microsoft Office, Microsoft Office Tools. Here you will find the Microsoft Clip Organizer, which can now be run as a stand-alone application. It helps you manage and search for images in your collection or those you've downloaded from the Microsoft clip art and media site at http://office.microsoft.com/clipart. Other programs in the menu include the Microsoft Office Picture Manager, Microsoft Office Document Imaging and Microsoft Office Document Scanning.

Picture Manager is a great tool for organizing photos and other images. When you launch it, your My Pictures folders appears in the Shortcuts bar on the left and photo thumbnails appear in the middle area. The three views: "thumbnail," "filmstrip" and "single image" let you see your collection in various ways and you can adjust the size of the preview images using the slider in the bottom right. To copy photos from one folder to another, drag and drop them or hold Shift as you drag and drop to move them instead.

Click Edit Pictures to find tools for fixing your photos including a crop tool, resize tool and tools for adjusting colour and fixing red eye. The AutoCorrect button applies a one-click fix to a photo and it's one of the smartest I've seen in any program. There's also a rename feature, which is great for sequentially renaming photos downloaded from a digital

(screenshot: Brochure3_p7.mdi - Microsoft Office Document Imaging)

Evaluations

Our evaluation systems allow you to quickly and easily monitor employee performance.

We provide an 'off the shelf' solution for small business wanting to institute a system quickly and without fuss.

We can also create a customised solution for your particular needs and train and supervise your staff in working with the system.

Manuals

Our professional team can create all the manuals you require for your business, including training manuals, new employee orientation manuals, safety and quality assurance.

Our manuals are designed for easy update and, on completion of the job we hand you the document in a format compatible with your computer systems so you can maintain the currency of these.

Employment

We have the expertise to help you with all aspects of employing staff, including:

- preparing advertisements
- screening applicants
- conducting interviews
- conducting pre-employment skills training
- arranging medical and psychological testing
- employment agreements
- new employee orientation

Exit strategies

One of the most vulnerable times for your business is losing an employee.

We offer custom exit plans for your business covering everything from Exit interviews, exit policies to protect you and your employees and procedural manuals for computer systems and physical.

Human Resources Solutions by http design

Hard to read Sam, can we fix this please? I think the image is fine...

---

by choosing View, Thumbnail pane and click a thumbnail to view that page. There is an OCR (optical character recognition) option to convert a scanned image to editable text, which can be sent direct to Word for you to work on.

There are also annotation tools for adding text, shapes and images on a layer over the top of your scanned page. You can show or hide the annotations as desired and you can also permanently merge them into the scanned image.

All these hidden tools offer added functionality when you're working in Office or when you simply need the features they provide.

By Helen Bradley

---

camera. Click the crop option and you can crop to a range of standard dimensions and orientations such as 3x4 and 5x7 as well as a custom size. None of the fixes you make affect the original image unless you select for them to be saved, and you'll be prompted to do so when you exit the program.

Picture Manager can be run on its own or you can take advantage of its interface with Office. Right click a photo and choose Send To, Microsoft Office and choose the open file to send it to or a new file such as an Outlook email, Excel workbook, PowerPoint presentation or a Word document.

The other tools, Microsoft Office Document Imaging and Microsoft Office Document Scanning are closely integrated with each other and with Office. You can launch either of them individually or you can run one from inside the other. So, if you open the Imaging tool and choose to scan something, the Scanning tool opens automatically. Likewise when you've finished scanning a document, the Imaging tool opens to display the scanned file.

In Document Scanning you can configure and save your scanner settings for reuse later on. So, you can set up your scanner for a particular task, including setting the desired resolution, and whether to scan in grayscale or colour, configure whether the pages should be rotated automatically and the page size to scan at, and then save the settings as a preset that you can later click to select and use. You can configure multiple presets each for a different scanning task. You can also scan a multi-page document to an MDI or TIF file – to do this in the Scanning dialog, click the Prompt for additional pages checkbox and you'll be able to scan page after page until you're done.

The Document Imaging tool can open and read TIF and MDI files and it has features for working with them such as reorganizing the order of pages. You can view thumbnails of the pages down the left of the dialog

Professional printing at home?

You've got a powerful computer, antivirus programs that you can trust, the right software, and a computer good enough to produce beautifully designed documents to impress your clients.

The easiest thing to do is to send your project digitally, but often your clients will want the tactile benefits of paper. You want your project to look professional, so what do you do? Head down to the local copy shop and use their high-end machines?

There may be a better solution – a home printer that does a professional job. There are three units that cost less than one thousand dollars each that have been designed to target small and medium business customers:

Lexmark C520n

The Lexmark C520n colour laser printer starts at $799. It features true 1200 x 1200 dots per inch (dpi) resolution for sharp text and graphic outputs and Lexmark has introduced a new toner formula and delivery method to enhance the quality of the print.

Thanks to an intuitive operator panel with "show me" screens, users can easily make common corrections.

Printing up to 20 pages per minute, the C520n delivers the fastest rated colour speed for laser printers in its price range. The printer supports a variety of paper types, giving you the opportunity to select the one that will bring out the best in your design.

The cost of toner is always high – in this case, expect to pay around $140 per cartridge. Replacing toner cartridges is easier thanks to front door accessibility and easy access toner assembly.

OKI C5800

Selling for just under $1,000, this printer delivers crisp, bright 1200 x 600 dpi color output with the first page coming out in as little as 11 seconds.

The C5800 prints up to 24 full colour pages per minute using single pass LED technology. The result is stunning glossy pictures on ordinary paper.

Speaking of paper, the printer can handle up to 110 lb (203 gsm) card stock and seems to be the only printer in its class capable of printing a banner up to 4 feet long.

Again, the cost of the new microfine toner is high (around $55 for standard black and $85 for standard colour cartridges), but standard toner cartridges

Lexmark C520n

can print 2,000 pages with a higher capacity cartridges capable of printing up to 5,000 pages.

An important consideration when purchasing a laser printer, the duty cycle of the OKI model is set at 60,000 pages per month.

Xerox Phaser 8500

The Phaser 8500 starts at $849. This printer is special. It does not use toner but a solid ink technology which provides consistent images on virtually any printing surface from transparencies to cardboard.

Believe it or not, the solid ink sticks are environmentally friendly and virtually waste-free. Dry ink prints have proven to be the most water resistant compared to all other printing solutions.

A pak of three ink "sticks" costs around $65.99 for black and $104.99 for the colours. The Phaser 8500 is also fast: as quick as six seconds for the first page and up to 24 pages per minute after that.

These three performers among other small and medium duty colour office printers deserve a look. Price and compare and soon you'll be collating your own annual sales figures, complete with attractive pie charts and bar graphs... much to the chagrin of your local copy house.   **By André Salwyn**

OKI C5800

Xerox Phaser 8500

Google Earth

Google used the first Geo Developer Day event hosted at its San Jose, California-based headquarters to announce several major updates to its mapping products Google Maps and Google Earth.

Google Earth now features a more streamlined user interface and is now available for the Linux operating platform as well as Windows and Mac.

Google also announced several updates to Google Maps and the Google Maps API (Application Programming Interface), the developer tool that enables users to easily embed Google's interactive, dynamic maps into their own websites. These innovations include:

Google Maps API: In response to developer feedback, an update to the Google Maps API enables developers of Google Maps-powered mash-ups, or websites that merge geographic information with Google Maps, to integrate data based on addresses. This ability to geocode addresses using the Google Maps API is the most requested feature from Maps API users.

KML for Google Maps: A new feature of Google Maps enables the display of KML (Keyhole Markup Language, the file format used by Google Earth and other applications to share geographic information) on Google Maps. This innovation enables data created in Google Earth to be viewed in a web browser as a simple mash-up. Requiring no computer programming expertise, KML for Google Maps makes the sharing of geographic information even easier.

Google Maps for Enterprise: Addressing the needs of the enterprise community, Google announced fee-based licensing and support for businesses wanting to embed a Google Maps experience in websites or internal applications. Leveraging the Google Maps API, this product enables businesses to map customer locations, track shipments, manage facilities or view any other data source in a geographic context.

Google Earth is available at http://earth.google.com. The Google Maps API is available at www.google.com/apis/maps.

PC previews from E3

PC games carved out a strong niche at the Electronic Entertainment Expo in Los Angeles. Here's a look at some of the titles you can look forward to:

Sid Meier's Railroads!

Medieval II: Total War

The latest in Creative Assembly's Total War franchise spans the years 1080 A.D. to 1530 A.D., an era that includes the age of chivalry, the Crusades, the introduction of gunpowder, the Renaissance, and the discovery of the New World. Players embark on a campaign to cultivate their small kingdom into an empire, leading armies across Europe, the Middle East and America in a blend of real-time combat and empire building. The game features hundreds of unit types, and has undergone a graphic overhaul that introduces dynamic weather effects and enhanced character details.

Sid Meier's Railroads!

The latest from the creator of Civilization, Pirates! and the "Tycoon" series is a railroad sim set in a richly-detailed 3D environment. The game combines features from real-world and model railroads, offering a drag-and-drop interface for laying track, bridges, tunnels and train stations. Compete against rival tycoons by routing trains and cargo, servicing the cities and industries that spring up around the tracks, hauling raw materials to market and transporting passengers while juggling economics and random events. There are more than 30 trains in the game — from classic diesels to modern bullet trains — and unique engines can be designed with the "LocoBuilder."

Stronghold Legends

A new spin on medieval real-time strategy series Stronghold explores the campaigns of three legendary Middle Ages figures: King Arthur and his Knights of the Round Table, Count Vlad Dracul and Siegfried of Germany. Features include 31 unit types, three unique castle types to build, a map editor with three distinct landscape types, a new skirmish mode, and a host of cool siege equipment including werewolf launchers, stake hurlers, tunnel systems, dragon harpoons, dispel bombs and magic gardens.

Desperate Housewives

Survivor, Law & Order, ER and CSI all have their own games, and soon so will the Golden Globe-winning TV series Desperate Housewives. This

Desperate Housewives

story-driven lifestyle sim is divided into "episodes" with scripts written by series writer Scott Sanford Tobis. Players take the role of a new housewife who moves to Wisteria Lane and becomes caught up in the scandals of the neighbourhood. While interacting with characters from the show, players must gossip, flirt, charm, and spy to uncover the truth while running a household. Tasks including cooking, gardening, decorating the house, and playing Texas Hold'em poker with the other wives. Brenda Strong reprises her role as deceased housewife Mary Alice Young, who serves as the show's narrator.

Spore

This much-anticipated game from Will Wright, creator of The Sims, is an exhaustive game that takes players on an evolutionary journey from the origins of life through to outer space. Starting out with a creature resembling a microbe, players nurture and develop it through six phases that will see it evolving into a race capable of using tools, forming tribes, designing and building cities and vehicles, then finally launching into space to continue exploring. The beings can hunt, forage, trade and attack in a lush world while interacting with environments and beings created by other players and shared online over Spore's servers.

Star Trek: Legacy

Spore

Star Trek: Legacy

In this outer space-based strategy/action game players assume command of a task force of warships and must lead their fleet to victory in large-scale space battles. Emphasis is on the tactical aspects of battle as opposed to micromanaging starships and resources. Victories earn "Command Points" to personalize ships and captains in the fleet. Other features include more than 60 ships; dynamic 3D battlefields including nebulas, wormholes, planets and stars; and four playable races (Federation, Klingon, Romulan and Borg). The single-player Federation campaign spans the entire Star Trek universe across its three epochs, with the Original series, Next Generation, Deep Space Nine, Voyager and Enterprise all represented.

MMORPGs

Age of Conan – Hyborian Adventures

Set in author Robert E. Howard's fantasy world of dark magic and brutal combat, Age of Conan features 30 regions spread across the nations of Cimmeria, Stygia and Aquilonia. With vast character customization options and numerous social opportunities including crafting and player-made

cities, players form guilds, lay siege to castles and work towards gaining the favour of the mighty Conan himself, who sits on the throne of Aquilonia as king. Funcom's Real Combat engine features a multi-point melee system to direct the swing of the weapon, and lets players team up in battle formations and direct players and NPCs in multiplayer battles and sieges.
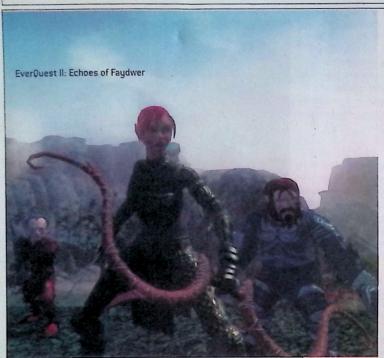
Gods & Heroes: Rome Rising

History and myth blend together in a game set during the glory days of ancient Rome. Players can complete more than 1,000 missions, defending the empire, duelling in the gladiatorial arena, battling mythological creatures including Medusa, Cereberus and the Hydra, and serving one of the ancient Roman gods, who can bestow special favours. Combat has a fast-paced action/RPG flavour, with linking and finishing moves that create a more visceral experience. Players can also recruit, train and command a squad of computer-controlled characters for formation-based combat.

Aion

Aion's fantasy world boasts a dynamic environment that developer NCsoft claims will be both visually stunning (with weather effects like heat waves and foaming shorelines) and highly interactive (with 3D freedom of movement courtesy of the Crytec game engine). Players will apparently be

Gods & Heroes: Rome Rising

EverQuest II: Echoes of Faydwer

able to dictate the direction that gameplay takes throughout the world. From the official press release: "The actions of every player on each individual server will push storylines toward new directions. As these actions accumulate, they will eventually trigger which will then further change the game's economies and alliances. Players will create their own distinct history and will have their names forever recorded in fame or infamy."

Expansion Packs

Age of Empires III: The WarChiefs

A new 15-mission single-player campaign continues from where Age of Empires III left off and adds three new playable Native American civilizations (including the Iroquois and Sioux) each with unique units, architectures, WarChief unit leaders and a different approach to the Home City feature. The European civilizations get new Home City content, units and cards.

Sid Meier's Civilization IV: Warlords

Offers six new civilizations with new unit types, six new scenarios (Chinese Unification, Peloponnesian Wars, Alexander's Conquests, Rise of Rome, Vikings, Genghis Khan), ten new leaders, two new leader traits, three new Wonders, a new person type called Warlord, a new unique building for every civilization, and the ability to make vassal states out of enemy civilizations.

Dungeon Siege II: Broken World

The expansion pack adds around ten hours of gameplay to the main quest and five hours to optional quests, concluding the story that was left hanging at the end of Dungeon Siege II. Players will see 40 new monsters, two new character classes, two new modes of play (Mercenary and Elite), new regent recipes, powers, skills, pets, armor, weapons and enchanted items, and a new race: the dwarf.

Rome: Total War – Alexander

A new campaign map with six new historical battles depicts the rise of Alexander the Great from the unification of Greece to the conquest of the Persian Empire. Additions include four new factions, including Macedonians and Persians, and more than 60 new unit types including Persian scythed chariots, elite immortals, and Alexander's Hypaspists, Phalangists and Companion cavalry.

EverQuest II: Echoes of Faydwer

EverQuest II's third expansion pack introduces a new playable race called The Fae and the new starting city of Faydwer. The achievement system introduced in the Kingdom of Sky expansion has been enhanced to include additional sub-class abilities. Other goodies include more than 350 new quests, 40 new creatures, 20 new adventure zones for players of all levels, and a new selection of hats, cloaks, armor, horse mounts, PvP rewards, items, equipment, spells and tradeskill recipes. Guild levels have been raised from 50 to 60.

Researched by Erin Bell

Win a

CREATIVE
DIGITAL ENTERTAINMENT
Starts Here.

Zen Vision:M

Creative Zen Vision:M
Smaller and better than ever before, the ZEN Vision:M does more than play your videos, photos and music. The ZEN Vision:M can hold 120 hours of video, an amazing 15,000 songs, tens of thousands of pictures and has a beautiful 2.5" high-definition LCD screen. The ZEN Vision:M can also be used as a portable storage drive to transfer documents and presentations.

Winner will also receive a bonus docking station!

HUB
DIGITAL LIVING

vidcast craze
the challenge: Create a three-minute funny or amazing digital video. The topic is up to you; all we ask is that you make us laugh (it's been a long week...).

THE RULES: Submission: Submit your videos, along with the Entry Information outlined below, by 11:59pm EST on July 30, 2006. Entries must be submitted via email to vidcast@ppublishing.ca or mail a CD containing your video to, Video Contest, 775 B The Queensway, Toronto, Ontario, M8Z 1N1. All entries will be available for download as a vidcast at www.hubcanada.com.
Size: No bigger than 10MB and no longer than 3 minutes in length
Acceptable file types: MPEG or AVI, no codecs other than DivX may be used for audio / video compression. QT (QuickTime) and WMV (Windows Media Video) are also acceptable.
Piccolo Publishing Inc. will not accept videos depicting vulgar language, violence, nudity, any actions that could cause injury or harm or illegal actions. Piccolo Publishing Inc. will not be held responsible for injury due to the making of videos.
Winners must present valid identification upon claiming prize. The prizes awarded are not transferable and cannot be redeemed for cash. To enter and to be eligible to win, persons must be residents of Canada and not employees or be domiciled with an employee of Piccolo Publishing Inc. its affiliate companies or advertising or promotional agencies. The winner(s) will be selected by Piccolo Publishing on July 31, 2006 from among the eligible entries received on or before the contest close date. Winners will be contacted by telephone or email. In the event that the winner cannot be contacted within the week following the contest, another entrant will be selected. All entries become the property of Piccolo Publishing and may be used in subsequent advertisements for the contest or in a printed contest gallery; if people appear in your video, it is assumed that you have secured the appropriate model release. Piccolo Publishing Inc. reserves the right to down-sample, up-sample, edit or otherwise adjust videos for display. All entries must be submitted by their creator and must be original work.

deadline: july 30th, 2006
send to vidcast@ppublishing.ca
all submissions must contain this information:

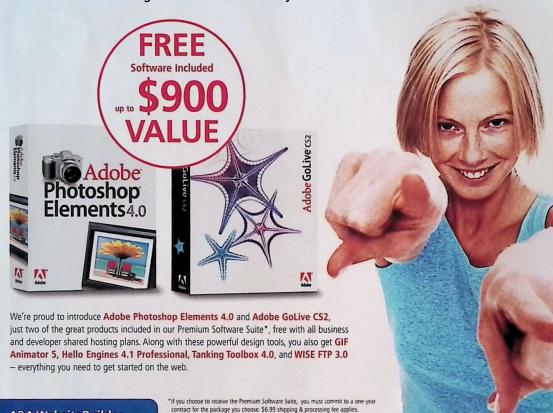| name	email	title of entry
address	age	camera used
phone number	occupation/school	software used

ISN'T IT TIME YOU CREATED

Discover the possibilities with 1&1!

Whether you're new on the web or a seasoned professional, you'll find everything you need at 1&1. We offer hosting solutions to meet every need.

FREE
Software Included
up to **$900**
VALUE

Adobe
Photoshop
Elements 4.0

Adobe GoLive CS2

We're proud to introduce **Adobe Photoshop Elements 4.0** and **Adobe GoLive CS2**, just two of the great products included in our Premium Software Suite*, free with all business and developer shared hosting plans. Along with these powerful design tools, you also get **GIF Animator 5, Hello Engines 4.1 Professional, Tanking Toolbox 4.0**, and **WISE FTP 3.0** — everything you need to get started on the web.

*If you choose to receive the Premium Software Suite, you must commit to a one-year contract for the package you choose. $6.99 shipping & processing fee applies.

1&1 WebsiteBuilder

4 easy steps …

1 Personalize your website

2 Choose your layout

call **1.877.go1and1**

YOUR WEBSITE?

Compare for yourself!

FREE DOMAINS INCLUDED
.com, .net, .org, .info

	1&1 BUSINESS $9⁹⁹	YAHOO! STANDARD $19⁹⁵	Go Daddy PREMIUM $14⁹⁹
Price Per Month			
Included Domains	3	1	$1.99/year with purchase
Web Space	100 GB	10 GB	100 GB
Monthly Transfer Volume	1,000 GB	400 GB	1,000 GB
E-mail Accounts	2,000 IMAP or POP3	500 POP3	2,000 POP3
Mailbox Size	2 GB	2 GB	10 MB
Blog	✓	✓	$2.99/mo. for ad-free blogs
Website Builder	18 Pages	✓	Freeware
Flash Site Builder	18 Pages	—	—
Photo Gallery	✓	✓	✓
Geographic Map	✓	✓	—
Driving Directions	✓	✓	—
Dynamic Web Content	✓	✓	—
Web Statistics	✓	✓	✓
E-mail Newsletter Tool	✓	$10/month	$9.99/year
In2site Live Dialogue	✓	—	—
Chat Channels	✓	—	✓
Form Builder	✓	✓	—
Database	50 MySQL	MySQL Support	50 MySQL
Search Engine Tools	✓	Extra Charge Applies	$29.99/year additional
Premium Software Suite	✓	—	—
90-Day Money Back Guarantee	✓	—	—
Support	24/7 Toll-free Phone, E-mail	24/7 Toll-free Phone, E-mail	24/7 Phone, E-mail

3 Add pages

4 Add text and publish

It's that simple.

1&1

1and1.com